IOWA CONSERVATIONIST

Volume 12 SEPTEMBER, 1953 Number 9

THE LOWDOWN ON RIFLED SLUGS

By John Madson
Education Assistant

It's time to look to your weapons. Another autumn is almost here, but at the end of this one there's an Iowa deer season. If you are an average hunter you'll be using a shotgun and rifled slugs, and if you are average, you won't know much about the combination. It's nothing to be ashamed of . . . neither do the experts.

To clear up some confusion in our own minds, we recently went out on the range with six different models of shotguns and a hundred rounds of ammunition.

It didn't take long to find out why so little has been written about the performances of rifled slugs. It is simply that no two shotguns shoot rifled slugs the same way; at least no two of the six that we tested did.

The best accuracy and grouping of shots seemed to be with barrels of other than full choke. Improved cylinder and modified full choke barrels shot better than the full choke. The latter threw slugs a little wildly, the shots usually drifting off to the left and sometimes showing "fliers." Most authorities believe this is due to the impact of the slug meeting the choke of the bore, resulting in some deformation of the slug and a consequent loss of accuracy.

In spite of this "squeezing" through the choked bore, the barrels of the guns were absolutely unharmed by the slugs. There were no bad effects on full chokes, polychokes or double guns. They were, however, modern guns in good condition.

There is no reason for the rifled slug to harm a barrel. The hollow base of the slug is so deep that the entire slug is almost hollow, and is easily compressed when passing through the barrel.

Accuracy of the shotguns was, in general, surprisingly good. That is, considering that there were no sights other than the front bead. But with no rear sight there was little difficulty in keeping all shots within a 15-inch circle at 100 yards. Groups even smaller than this were shot. Good rear sights

(Continued on page 166)

Jim Sherman Photo.

After spotting for Ries Tuttle, *Register and Tribune* Outdoor Writer, the author believes that every hunter should shoot a few practice slugs through the gun he expects to use during the deer season.

STUNTED PAN FISH

By Everett B. Speaker
Superintendent of Biology
And Kenneth M. Madden
Superintendent of Fisheries

Fish need more than water to maintain a normal life. They require an abundance of food; good water containing ample oxygen, predators to keep them in check and sufficient space to enable them to tolerate their neighbors. When one or more of these simple necessities are lacking, fish do not prosper and sub-normal development called "stunting" is common, especially in smaller lakes and ponds. There are many causes for this abnormality but it usually results from an over-population of fish.

In fish, as in other groups of the animal kingdom, there is a constant strife for existence. Reproductive success often continues even though food is scarce. This results in a high population of thin emaciated individuals. Prolonged turbidity is damaging to pan fish as well as the predators that keep them under control since they secure their food largely by sight. Turbidity also limits certain of the valuable food organisms, especially the tiny water animals collectively called zoo-plankton, that make up a substantial part of the diet of young fishes.

Stunted populations should not be confused with the young of healthy, normal fish. Certain external characteristics, such as large bulging eyes, paper-thin bodies and poor coloration are usually indicative of malnutrition. Sometimes, however, they appear almost normal, and the most positive means of detecting abnormalities in growth is by checking their age and growth rate by scale-reading and by comparing lengths and weights with fishes that have made normal growth. This can be done accurately in the laboratory and the Commission has the necessary equipment and trained personnel to do this work.

The normal life expectancy of the black crappie is six or seven years, although some individuals

(Continued on page 167)

UNDRESSING BR'ER SQUIRREL

When you don't know how, skinning a squirrel can be one of the meanest, most discouraging, cussedest jobs in the world. You spend half an hour shucking off the tough hide, only to find that a good portion of meat has come off with it. What's left is covered with small hairs that your wife has to pick off one by one.

But when you know how, there's nothing to it. Squirrel hunting is a lazy man's calling, and you owe it to the honor of the sport to do things the easy way. Just as most experts kill their limits of squirrels by simply sitting down somewhere, so they also completely clean a squirrel in less than a minute.

There are several ways of doing this, but we are only concerned with the quickest, laziest and cleanest method.

With a sharp knife, cut through the underside of the tail next to the body, cutting through the bone but not through the skin at the top of the tail. Extend this cut along each side of the squirrel's back for about an inch.

Take the two hind feet in your right hand and place your right foot on the squirrel's tail. With a see-sawing motion, pull up on the hind legs until the skin peels tightly up against the shoulders. Change the hind feet to your left hand (still standing on the tail).

With your right forefinger and thumb dress out the front legs and neck, cut off the head, but don't cut off the front feet or pull off

(Continued on page 165)

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LAKE MANAWA STATE PARK

By Charles S. Gwynne
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Department of Geology
Iowa State College

The geological story of Lake Manawa State Park, as we see the area today, is mostly a story of the Missouri River floodplain. The lake basin itself is one of unusual origin for a state park lake. It might be called a basin of floodplain origin. The lakes of the state parks of northern Iowa are mostly in depressions in the glacial drift. Those of southern Iowa with the exception of this one are in dammed-up river valleys. But in Lake Manawa we have one which is out on the bottomland of the Missouri. It is a few miles south of Council Bluffs, in southwestern Pottawattamie County. It is neither a depression in the drift surface nor a dammed-up river valley.

A river like the Missouri in the course of years slowly shifts its channel. Such a river has a low gradient, a low rate of fall. In time of normal volume it flows rather sluggishly. If the flow is directed against one bank by an obstruction, that bank in turn becomes an obstruction and the flow is directed against the opposite bank. Thus the river acquires a meandering or looped course. These meanders slowly change their positions. The river, being swifter on the outside of the bend, cuts against the outside bank. On the inside of the bend, where the velocity of the current is less, deposition takes place. Thus the width remains about the same, but the position of the channel slowly changes. So has it ever been with the Missouri. The river has wandered back and forth, all over the floodplain.

Some of the loops become very narrow at the neck. Then the river may break through in time of flood, and thus straighten its course. Gradually the ends of the deserted portion of the channel get closed off by deposition and we have a lake basin.

On a large river like the Missouri changes in the channel may take place in another way. The area built out on the inside of the meander is of course not much above normal river level. It has crescentic ridges, formed as the migration proceeded. In the course of a flood the river may start flowing through the depression between ridges. This is part of a former channel. It is gradually widened to become again the main channel. Thus the course of the river is shortened, and at the same time the deserted portion of the river bed is left as a prospective lake basin. Again it must be closed off by deposition at the two ends, but this gradually takes place.

The basin of Lake Manawa, at least as the pioneers first found it, was probably formed in the first of these two ways. Maps of fifty years ago show it as a crescent-shaped lake, open toward the south. The north end had a large island in it, suggesting that the second process had played a part.

Such lakes formed on floodplains have a relatively short life under natural conditions. When the river spreads out in flood stage the lake basin receives a heavy load of sediment. This is because the river velocity is decreased over the lake basin area. It becomes more and more shallow. Vegetation takes hold in the most shallow part, generally spreading out from the shore. The presence of vegetation leads to the accumulation of even more sediment in time of flood, as the vegetation slows the velocity of the mud-carrying water. In time the lake becomes a swamp. Finally the area is land, up even with the rest of the floodplain.

It is by this process that the floodplain of the Missouri has been made so level. In the course of the development of this wide and almost level area there have been numerous lakes similar to Manawa. Many of these lakes have had the shape of a crescent. They are called ox-bow lakes.

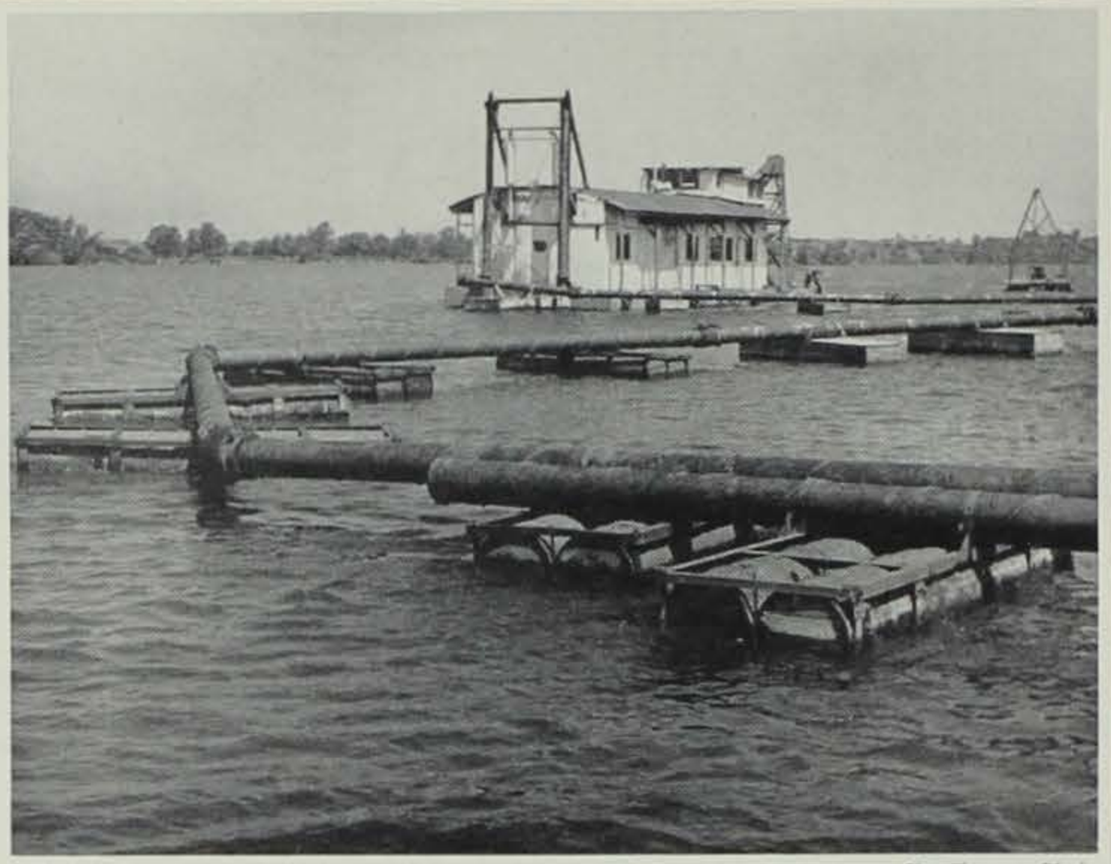
Having accounted for the basin, let us turn to the matter of water supply for the lake. That is easy, with the Missouri right at hand. Normally the river is high enough to keep water flowing into the lake through a ditch. If it becomes too low, pumping from the Missouri must be resorted to. Otherwise the level of the lake would get lower and lower. The only water coming in would be seepage from the surrounding floodplain, and it would be relatively small in amount. At the same time there would be a great loss by evaporation from the water surface.

Taking water into the lake from the river means bringing in a lot of sediment. This of course settles to the bottom and the lake becomes more shallow. Even when the river is at a low stage there are 500 parts of sediment per million parts of water. In time, were it not for dredging, the lake would be converted to a swamp.

Man has made many changes in the lake. By dredging he has deepened it, even maintained it as a lake, and has built up the shore. The channel which once existed around the island in the northern part of the lake has been filled in. To a certain extent the lake level may be controlled. If the river falls below the level of the intake, to the ditch, the water may be brought in by pumping. If the river gets too high the intake can be closed. But when the river is in a high flood stage it spreads over the lake area.

The shores of most lakes of Iowa show the effects of wave erosion. Not so, however, with Lake Manawa. The shores are too low and the off-shore lake bottom too shallow. There are no bluffs developed, as on so many Iowa lakes. Neither are there "walls" of boulders, formed largely as the result of ice-push, as on the northern Iowa lakes. In fact any materials coarser than sand or fine gravel are lacking from the entire area. The solid rock of the earth's crust lies 90 feet or so beneath the floodplain. Down to the bedrock there is nothing but material brought in by the river—clay, silt, sand and perhaps gravel.

Left uncontrolled, other lake basins would be formed by the Missouri in the years to come. Lake Manawa would have a relatively short life. It is only through dredging and careful control that it may be maintained as a lake.



Jim Sherman Photo.
Like most ox-bow lakes, Manawa silted rapidly after its formation. It was the first lake to be improved under the state lake dredging program.

Council Bluffs Nonpareil Photo.
Lake Manawa, as seen from the air. The winding Missouri River in the background.

Biologists of the Fish and Wildlife Service report that bats may be repelled from attics by the use of naphthalene or paradichlorobenzine, two chemicals commonly used as moth and insect repellents. Three to five pounds of naphthalene flakes will usually be sufficient to treat the average attic but if the building is not bat proofed the treatment will have to be repeated periodically.—G.S.

A transparent eyelid protects birds from dust and other foreign matter. This eyelid it also a filter and a lens, and enables eagles to look directly into the sun.—J.M.

Jim Sherman Photo.
For 31 million adults in the United States, hunting or fishing licenses are annual admission tickets for an outdoor opportunity.

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TANGIBLES AND INTANGIBLES

By Michael Hudoba

Whenever I hear a sportsman make any comment that indicates a defeatist attitude toward this problem of increasing the outdoor opportunity, and especially an inferiority viewpoint on the issue of tangible values versus intangible values in conservation, I cannot help but rise to make a stump speech like the old politician in my home town would do whenever he saw two people together the day before election.

First, I hate to think that more than thirty million adult Americans cannot face up to the issue of working together to do some constructive effort for their recreational interest, that traditional sport of hunting and fishing which is getting new converts every year, and which means so much to us in these days of increased living pressures. Of course, if we don't support constructive conservation-restoration efforts, then we will have real reason to have an inferiority complex.

But my special target is the defeatist attitude of some of those concerned in conservation who become faced with the issue of tangible versus intangible values.

The business of selling blue sky stock was quite profitable a few years ago—although such practice now would earn lots of free time in some federally supervised hotel.

But selling blue sky is legitimate. It is part of this question of tangibles versus intangibles in the field of conservation. It is true that we become hard put to measure and place a direct economic value on some of the things that one of every five American adults goes afield to enjoy.

The lumberman can give you a dollar value for a forest by measuring the board feet of the stand; the dam builder can calculate the value of every cubic measurement of water in the stream gurgling over a pebbled riffle; and the farmer can give you a pretty good estimate of the bushel yield on the back corner which supports a covey of birds. But then we are apt to stutter a bit to calculate the value of the ethereal—although we may allow ourselves to get boxed in trying to estimate the value per pound of a game bird or big game or fish.

The sport of hunting and fishing, according to a survey made by *Sports Afield*, brings nine billion dollars a year into the economy of this country by expenditures of hunters and fishermen in pursuit of their recreational interests. This is big business. It is a bigger business than many of the businesses that get the attention of do-good economists and planners.

But that isn't the point. Last year over thirty-one million adult hunting and fishing licenses were sold in this country—that is, one in each five of this nation's total numerical population went to the effort to go to a license selling agency to buy and pay for a 'so-called' ticket to go afield or to a lake or stream.

They asked no guarantee of pound for pound return in bag or creel; they were paying an admission for an outdoor opportunity. I'll bet that, like myself, they got full value watching the tense drama of a flashing bird dog at work, hearing the ear-filling burst of a covey rise, and the snap of the gun report. So I miss, and the birds scatter. We fly a grouse and bag a leaf or tree trunk; we get a rise and the fish leaps free of the lure. The tangible would be a bag or creel full or legal limit. The intangible is the smell of the woods, the crispness of autumn, the color and the freedom all become one and part of nature, returning to the fundamentals of our existence. This one should not try to calculate in dollars, even if they could.

We sing our anthems; we love our rocks and rills, our templed hills. These are part of the Constitution which says that we pursue happiness as one of our three basic freedoms.

So, thirty-one million Americans buy licenses to hunt and fish, which is four times more than the number who bought licenses ten years ago. Over forty-one million Americans visited the national parks and monuments of this country last year, an all-time record, and more than double ten years ago. Over thirty million visited the national forests last year. We cannot even begin to count those who visited state parks, picnic areas along roadsides, or merely went for a walk afield or into the woods. In my book, it begins to add up to more than a majority percentage of our national population who like to go to and see the woods that a sawlog woodsman can appraise in board feet, or to enjoy the stream that a one-track minded engineer would like to dam, or any of these resources that have more than one use which some would like to convert to a single tangible economic value.

I won't go into the number of states of this country where the tourist business is the first, second, third or fourth largest industry of the state, or the states to which people, visiting to enjoy the intangible outdoor values, leave more than a hundred million dollars annually.

We could go on and on reciting a brief with statistical data which here I'm giving from memory and round figure estimates. This question of tangibles versus intangibles is relative. There is a place for both. We need resources to continue our existence and to build and grow. But we also need the intangibles protected and retained in perspective to give us a reason to work and to build and to grow.

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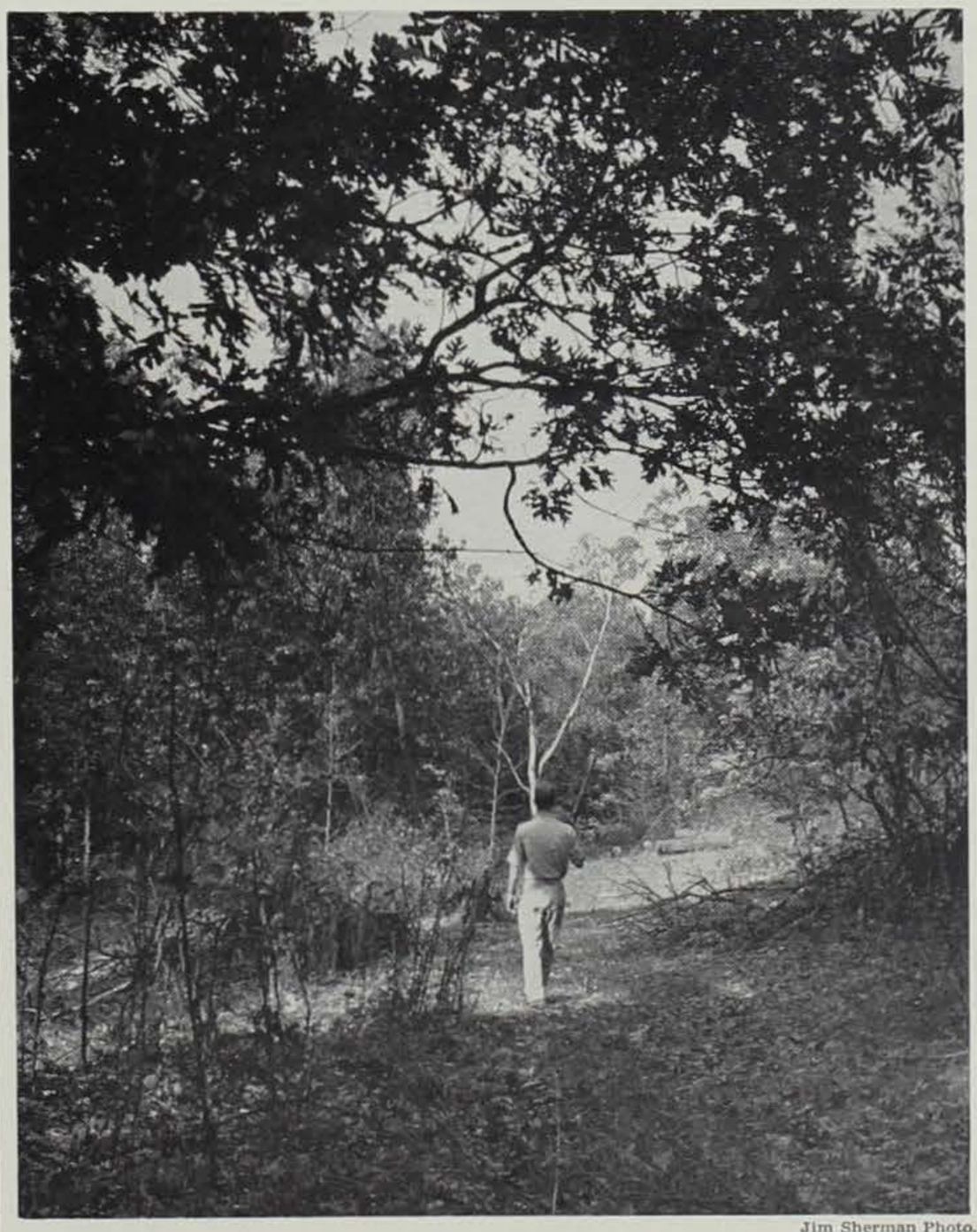

Jim Sherman Photo.
The expenditures of hunters and fishermen in pursuit of their recreational interests brings 9 billion dollars a year into the economy of the country.

Minnesota, Wisconsin and Michigan comprise one of our best known vacation areas. One of these states discovered that for 45 per cent of those who vacation there, fishing is the major attraction. Another observes that fishing and hunting (mostly fishing) had a value of $250,000,000 during the past biennium. Fishing is big business in these three states. The tourist business, which relies mainly on fishing, is one of the major industries.—*Sport Fishing Institute Bulletin.*

A sure way to take fish is to place a cricket, grasshopper or other insect on a hook and float it down the river on a chip or shingle. Don't use a sinker. When the little raft comes to a rock or snag, jerk the baited hook off into the water. This is a deadly method in late summer for walleyes, catfish, and bass.

Jim Sherman Photo.

"The sooner the individual sportsman gets out of the nodding acquaintance category and places himself on an all year-'round friendship basis with the farmer the sooner he will enjoy better hunting."

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FARMER HOLDS KEY TO BETTER HUNTING

By Henry P. Davis

The hunting possibilities of the average sportsman lie in the hollow of the farmer's calloused hand. It is upon his land that good or poor hunting is to be found, and for this reason he holds the key to good hunting in his pocket.

Farmer-sportsman relations have been the subject of many a lengthy discussion in conservation and sportsmen's meetings for a long period of years, but the subject would disappear from the agenda if only the individual sportsman would do something about it.

The sooner the individual sportsman gets out of the nodding acquaintance category and places himself on an all-year-round friendship basis with the farmer, the sooner he will enjoy better hunting. The farmer is the keeper of the key to good hunting. In fact, he holds the key to any hunting at all. True, all wild game belongs to the state, but the control of most of its habitat is vested in the owner or tenant of the land. The farmer can lock the door to all hunting on his land, or he can, as he usually does, be exceedingly generous with his hospitality.

There is an easy approach to the use of the farmer's magic key. This is simply through the use of common courtesy. The farmer is a busy and peace-loving man. It is no pleasure for him to stop in the midst of his work and force a tresspassing hunting party to retire from his land.

The farmer likes friendly, courteous company. He resents being "talked-down-to." He'll generally meet friendly overtures more than half-way. But he'll stand just so much high-hatting and then . . . "Click," the key is turned in the lock of hunting privileges and Mr. Discourteous finds himself looking for other hunting grounds.

The matter of making friends with the farmer is an easy and pleasant undertaking. All you have to do is to practice the code of courtesy all of us have been taught anyway.

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Jim Sherman Photo.

It is upon the farmer's land that good or poor hunting is to be found and for this reason the farmer holds the key to better hunting.

WARDEN'S TALES

Here's some more figures on deer populations. Frank Starr, in charge of Cherokee and Buena Vista counties, was recently checking his territory by air. On a flight between Sioux Rapids and Washta, Frank counted a total of 209 deer. Of these, 76 were almost within the city limits of Cherokee.

Employees of the Cashway Lumber Yard in Cherokee also told Frank of standing in their doorway and counting 60 deer at one time.

There are no parasites of fish which can't be rendered harmless to man by thorough cooking. B.C.

In recent years juvenile 'coons have made up 60 to 65 per cent of the Iowa 'coon hunter's bag.—G.S.

The following little maxims might be called Commandments of Hunter Courtesy. It's just as easy to obey them as it is to violate them. They'll please the farmer mightily and after awhile they'll become a natural, effortless part of your conduct afield. They contain the "Open, Sesame" to the farmer's fields and coverts . . . and to his open-handed hospitality. Here they are:

1. Always drive in the farmer's yard and **ask permission to hunt.**
2. Hunt only in the areas he designates. Never go on ground he wishes to keep inviolate. Stay away from his stock.
3. Respect his fences. If necessary to climb them, climb over by a post. Use gates if possible, closing them behind you, if they were closed—leave them open if they were open.
4. Never shoot near houses, barns or livestock.
5. Leave his fruit and other crops alone. If you want some, buy it from him.
6. Go around fields where people are working, or pastures where livestock is grazing. Do not walk on seeded ground. Don't walk through standing crops.
7. Share your game with him.
8. On your next trip, bring his wife or children some little gift or token of friendship.

These are simple little rules of common courtesy that any sportsman can practice to the benefit and pleasure of all concerned. They are really keys to better hunting. —*Remington News Letter.*

Jim Sherman Photo.

The masked bandit of the basement.

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MASKED BANDITS

It would happen only to me!

Last Wednesday evening while I was hurrying to get supper so I could get back to the office for the end of the circulation campaign, I heard some strange little thumps and bumps somewhere in the house. I thought it might be squirrels playing on the roof but was so rushed I didn't take time to investigate. Later, all was quiet.

Thursday evening, when I was washing the dishes, I heard the noises again and they seemed to come from the basement. In addition there were queer little voices. The sink is near the door to the basement and almost immediately whatever was down there was just on the other side of the door. I opened it a crack, and there were four big glowing eyes. I shut the door, but fast.

Now I declare I hadn't had a thing to drink but frozen orange juice, but the heat had been terrific and I wouldn't have been surprised to see lavender elephants.

Gathering my courage, I opened the door a little wider and there, looking appealingly up at me were two of the cutest little masked faces—good-sized raccoons! Again I shut the door, because I didn't really care to go on a coon hunt in the house on a hot night.

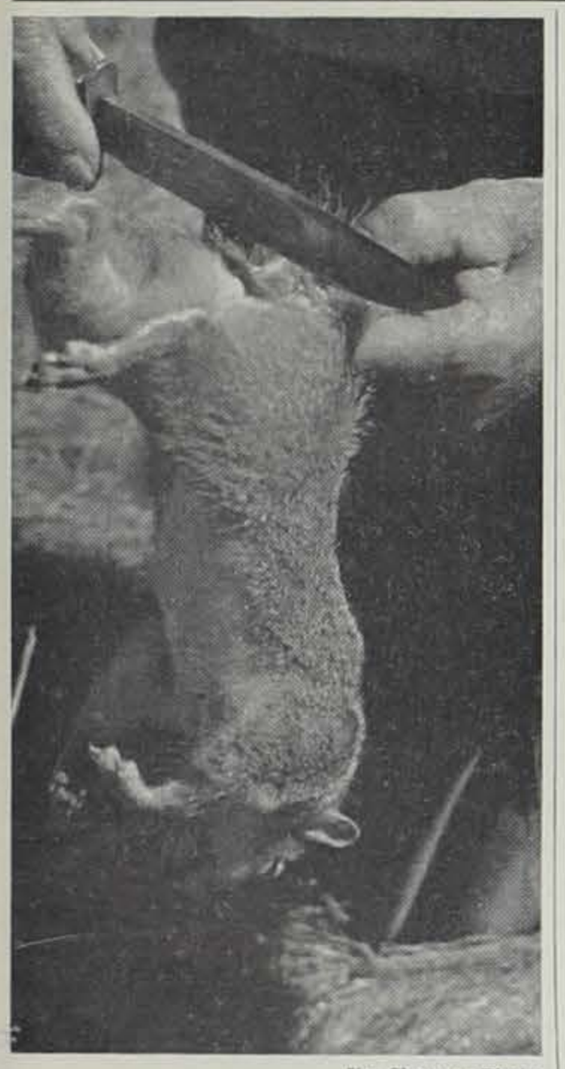
By the time I got my boots on so they wouldn't nip me, they had disappeared into the basement again. I opened the west outer door to the basement, and the next morning they were gone.

Apparently the raccoons had entered the basement through the coal room window to "beat the heat."

I always knew I had "bats in the belfry," but never anticipated "'coons in the cellar."—Dorothea Richardson in *Sigourney Review.*

We have been forgetting to pass on our annual warning about putting live minnows and chubs into city water right out of the tap. They will die within a few minutes as the gas in the water seems to knock them out quickly.

However, if you draw water into your bait storage tanks and let it stand for about three days, you can then use it for bait with safety. It is a good idea to keep a reserve supply of settled water to replenish the original supply after it becomes stale. This condition is not peculiar to Storm Lake but obtains almost universally where city water is chemically treated.



Jim Sherman Photo.

Cut carefully through the tail bone at the underside of the squirrel's tail. Do not cut through the skin on the upper side of the tail bone.

Squirrel . . .

(Continued from page 161)

the skin. The resulting loop of skin on the front of the squirrel can be thrown over the top of any convenient fence post, hanging the squirrel up where you can easily work on it.

Insert the knife under the point of the unpeeled fur on the stomach and pull the skin over the hindquarters and legs. Make a full-length incision along the belly of the squirrel and remove all innards. Cut off the feet and tail and the job is done.

And if it's done right, there won't be a hair on the squirrel's carcass. It's a good idea to wipe excess blood out of the body cavity, but don't wash the meat in the field. As the carcass dries it will have a glaze that will protect the meat until you get home. Carry the dressed squirrels in clean cotton sugar sacks to protect them from dirt and dust.

Many hunters prefer to clean each squirrel in the field as they shoot it, saving a job at the end of the day. The best way is the easiest way, and leave it to squirrel hunters to find it.—J. M.

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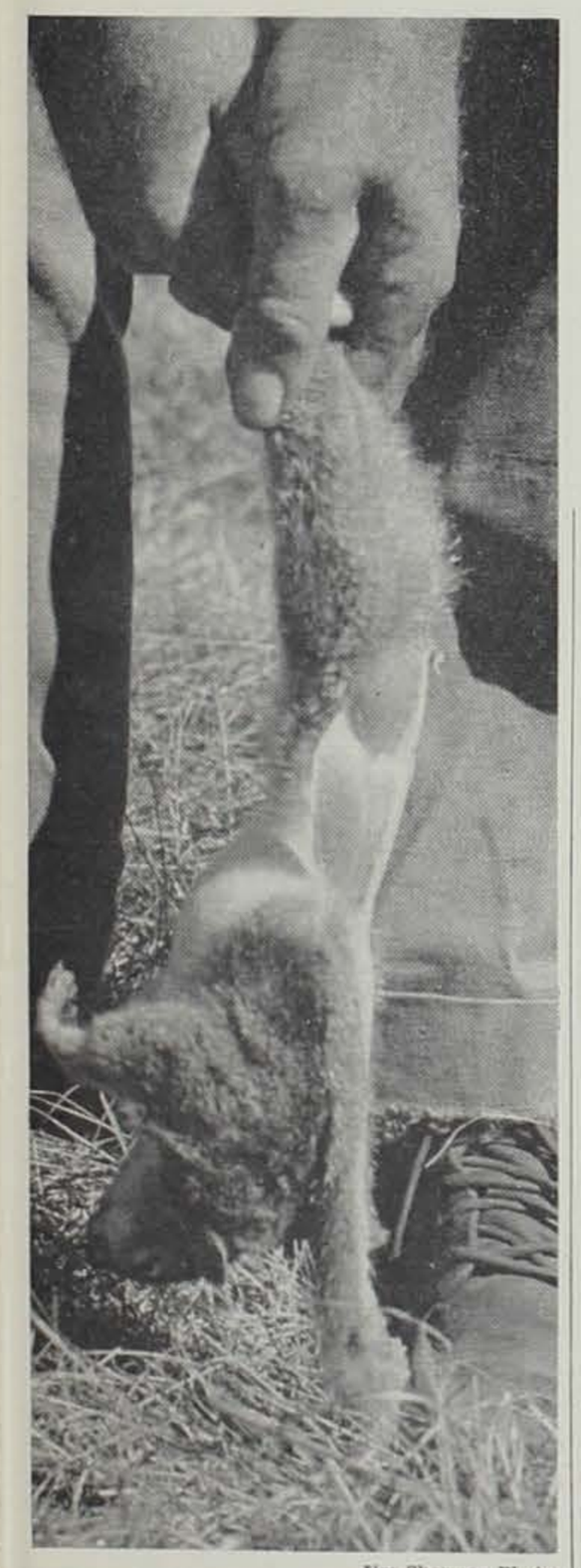
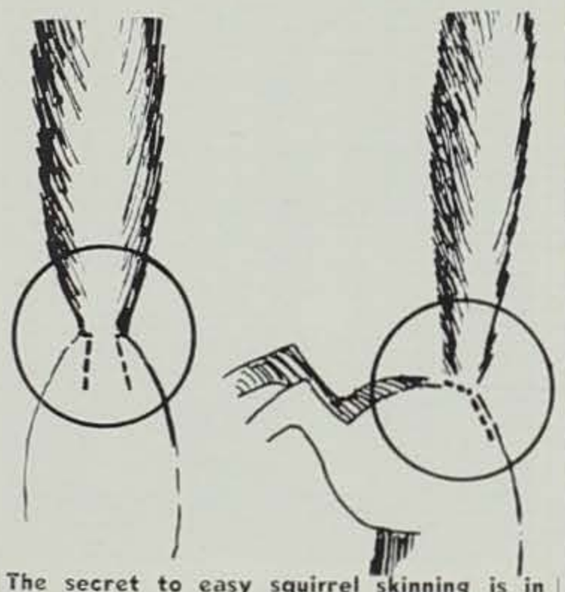


Jim Sherman Photo.

Step on the squirrel's tail, pull up with both hands and skin will peel back to the shoulders.



The secret to easy squirrel skinning is in making the first cut exactly as shown.

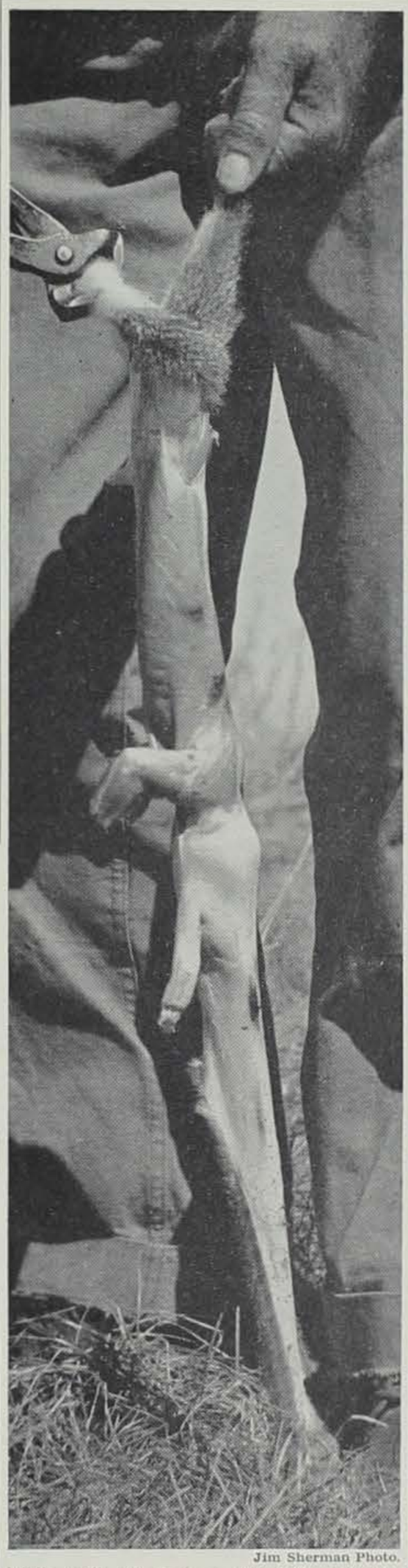
1953 IOWA HUNTING REGULATIONS

PHEASANT and **QUAIL:** Seasons have not yet been set, pending biological reports. They will be announced at a later date.

SQUIRRELS: Fox or gray squirrels. Season opens September 15, extends through November 15. The entire state is open, with a daily bag limit of 6 and a possession limit of 12 after the first day of the season.

RABBITS: Cottontails and jackrabbits. Season opens September 15, extends through January 31, 1954. Shooting hours are from 6:00 a.m. to 6:00 p.m. daily. The daily bag limit is 10, with no possession limit.

MIGRATORY WATERFOWL: Season opens at noon, October 8 and extends through December 1. On opening day shooting ends at sunset, and daily shooting periods thereafter will be from one-half hour before sunrise to sunset. Guns must be plugged to a 3-shell capacity and a 1953 duck stamp must be carried by all migratory waterfowl hunters over 16 years of age.



Jim Sherman Photo.

While still standing on the tail, pull the fore legs through the skin, then pull the v-shaped skin flap off over the hind legs.

DUCKS: Daily bag limit is 4, which is also the possession limit for the first day's shooting. Thereafter the possession limit will be 8 ducks. Only one wood duck may be held in bag or possession at any time.

GEESE: Daily bag limit is 5, which is also the possession limit. Not more than 2 of these may be Canada geese, their sub-species or white-fronted geese. The entire bag may be either blue or snow geese or any combination of them.

COOT: Bag and possession limit 10.

MERGANSERS: Daily bag limit of 25 on American and red-breasted mergansers, with no possession limit. Daily bag and possession of 1 on hooded mergansers.

JACKSNIPE OR WILSON'S SNIPE: Open season will extend from noon, October 8 through October 23. Bag and possession limits are 8 birds.

NASH CONSERVATION AWARDS

Creation of an annual $5,000 awards program for professional contributions in the field of conservation of natural resources was announced by George W. Mason, president and chairman, Nash-Kelvinator Corporation. Recognition will also be given to non-professional contributions.

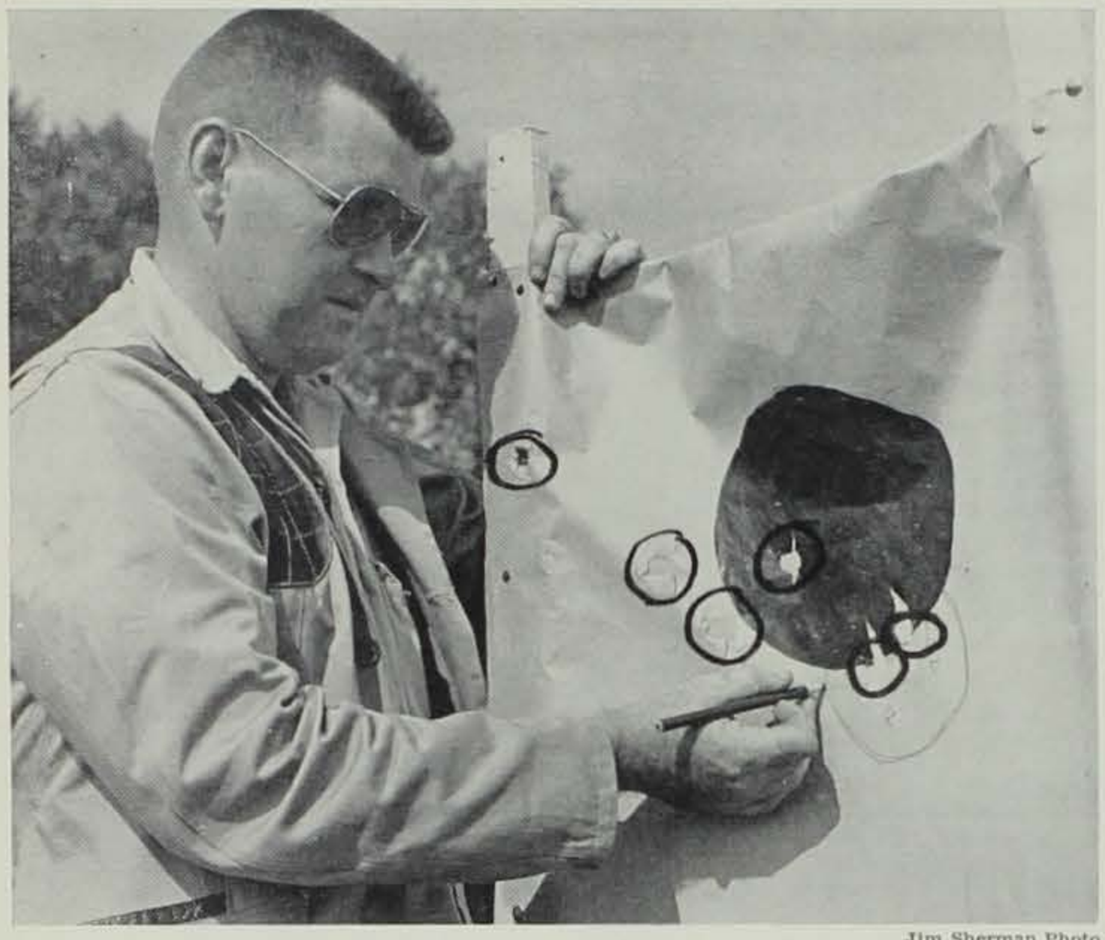
The nationwide program will be known as "Nash Conservation Awards." Ten cash awards of $500 each will be presented to ten professional conservationists, working in education, research, administration or enforcement, in any field related to soil, water, forest, fish or wildlife conservation. In addition, 10 awards consisting of plaques and citations will be given to non-professionals whose contributions to conservation have been performed as acts of good citizenship.

"The real sportsman has prize enough in his big musky or record grizzly, but there should be greater recognition for those who are devoting so much to the cause of conservation," Mason said. "We hope these awards will serve as a reminder to all of us that conservation today is a science, and without expert conservationists there would soon be no fish or game left. It is also important to stress the fact that all phases of the problem are related—including soil, water, forest, fish and wildlife conservation."

"The automobile industry has a stake in conservation because so much of the enjoyment of the outdoors depends upon the automobile," Mason said. "Nash has produced several films on hunting and fishing which have been shown to millions of people throughout the country. The interest of sportsmen has also led us to develop many special adaptations in our cars to make them of greater usefulness to sportsmen, campers and tourists."

Nominations for awards are to be made by newspaper rod-and-gun and conservation editors, rod-and-gun clubs, and public and private conservation agencies. Final selections will be made by the Awards Committee, which for 1953 consists of Ed Dodd, creator of Mark Trail; Pieter Fosburgh, editor of the New York State Conservationist; Johnny Mock, outdoors editor of the *Pittsburgh Press;* Alastair MacBain, chief of Information Bureau, U. S. Fish & Wildlife Service, and Michael Hudoba, Washington correspondent and authority on conservation legislation.

This year's awards will be presented at a dinner in Washington, January, 1954.



Jim Sherman Photo.
On the slug shooting tests little difficulty was experienced in keeping shots within a fifteen-inch circle at one hundred yards.

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Rifled Slugs . . .

(Continued from page 161)

would vastly improve rifled slug shooting, and there are several models available for shotguns, including one telescopic sight.

The only exception to accuracy was a 16 gauge single shot with a full choke barrel. Slugs from this gun struck three feet low at fifty yards, and more than five feet low at 100 yards. The following table gives the results of the six guns at fifty and one hundred yards. Velocities and energies of the slugs are from the *Winchester Handbook.*

Rifled slugs seem to deliver a little more kick to the shooter than ordinary shot loads, but it's nothing you will notice in the excitement of pulling down on a deer. To our ears there was little of the loud "thud" of a shotgun to the report, and more of a crash or crack like that of a heavy rifle.

Some of the most interesting shooting was with the double 12 gauge. Experts agree that the axis of a double gun's bores intersect at an average of forty yards. Because of this, a slug fired from the right barrel will strike the point of aim at forty yards, but shoot far to the left at 100 yards. The opposite would be true of the left barrel. This did not happen with the double gun we fired. The slugs were centered just below the point of aim at fifty yards, and also at 100 yards. There was no evidence of the gun shooting to the right or left. This, however, was only one double gun. It may be the only one in the world that shoots like that.

According to manufacturers, rifled shotgun slugs have a maximum range of about 600 yards. A 12 slug fired level at shoulder height strikes the ground at about 150 yards. It may bounce or ricochet and be dangerous at a much greater distance. Our testing did not include penetration or long-range tests, but a few shots through heavy planking showed a lot of punch. A 2½ inch plank didn't slow the slug much, and showed a very large and ragged hole. The slug hardly mushrooms at all, for it lacks the velocity to really open up.

From the table it can be seen that the 12 and 16 gauge guns work pretty well, but at a hundred yards the 20 gauge begins to run out of gas. This, added to the fact that the slug is lighter, limits its effectiveness as a deer gun.

The limited tests showed that a good shotgun shooting rifled slugs will shoot about fourteen inches below the point of aim at one hundred yards. Therefore, if the bead is held at the top of a deer's back at that range, the slug should drop into the chest. In an average gun, all shots should be within a sixteen-inch circle. *The tests also showed that only one flat statement can be made: our guns did one thing; your gun will do something else.*

By all means, shoot a box of rifled slugs through your shotgun before deer season and find out where the slugs are hitting. You may only get one chance at that big buck this fall, and you'll want to put your slug where it counts.

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GUN	RANGE	VELOCITY (feet per second)	ENERGY (foot pounds)	DROP	GROUP
12 gauge bolt action **(full choke)**	0	1470	1995		
	50 yds.	1269	1485	1 inch	5 inches
	100 yds.	1120	1165	4 inches	18" x 16"
12 gauge **double** (modified)	50 yds.	"	"	1 inch	3 inches
	100 yds.	"	"	12 inches	6" x 2"
(full choke)	50 yds.	"	"	1 inch	6 inches
	100 yds.	"	"	10 inches	6" x 12"
16 gauge auto **(polychoke)** (full choke)	0	1436	1600	.....	
	50 yds.	1243	1205	.....	
	100 yds.	1100	940	10 inches	13" x 14"
(improved cylinder)	50 yds.	"	"	5 inches	4" x 5"
	100 yds.	"	"	8 inches	10" x 14"
16 gauge pump (full choke)	50 yds.	"	"	7½" high	8" x 4"
	100 yds.	"	"	0	16 inches
16 gauge single **(full choke)**	50 yds.	"	"	3 feet	.....
	100 yds.	"	"	5 feet	.....
20 gauge bolt **(full choke)**	0	1410	1245	.....	.....
	50 yds.	1213	923	3 inches	2½" x 4"
	100 yds.	1071	718	11½ inches	14" x 16"

Jim Sherman Photo.
A 1910 hunting license recently found under the buttplate of an old shotgun.

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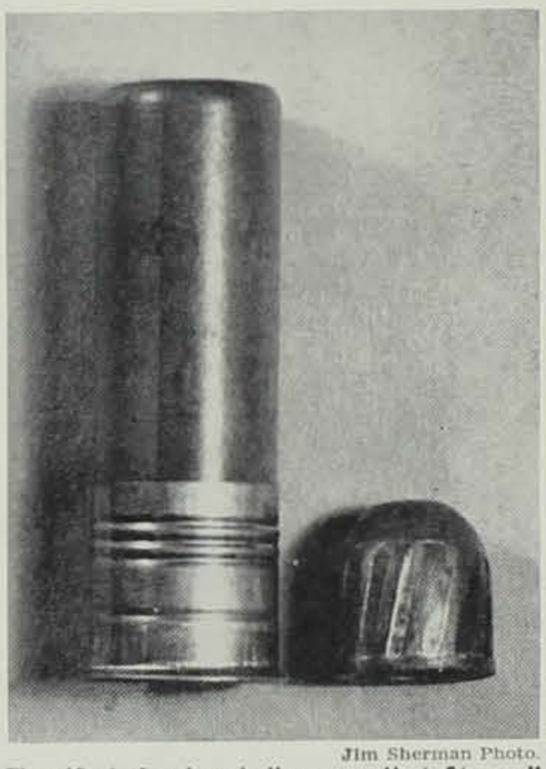

Jim Sherman Photo.
The rifled slug is a hollow cap that fits well down in the shell. It packs plenty of wallop for deer at a hundred yards.

CRAWFISH VS. TURTLES

If you have been wondering lately what manner of thing it is that eats the bait from your hook with scarcely a tremor of the line, probably the answer is "crawfish." I had this experience the other day, and laid it to turtles. But finally I lifted the bait from the water very carefully and found three big crawfish clinging to the bait. These crawfish will clean a hook in no time at all.—*Manchester Democrat*

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Jim Sherman Photo.
More often than not, the aggravating bait stealing blamed on turtles is done by crawfish.

EXPIRED LICENSE DEPARTMENT

PART II

In the July CONSERVATIONIST there was a short article about an old shotgun that was found to contain a 1918 Iowa hunting license.

Mr. Charles Lancaster of Alvord read the article with interest, and decided to examine an old double 10 gauge he had recently purchased.

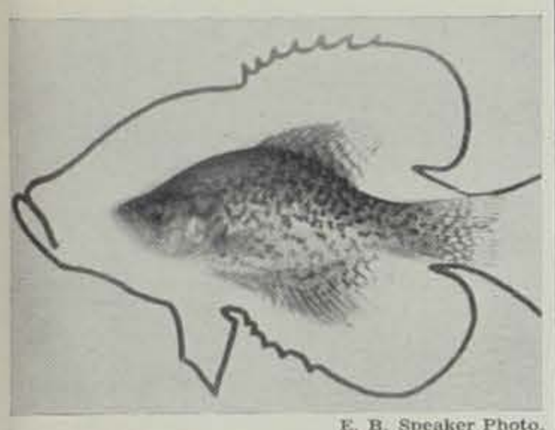
In the stock under the buttplate he found a hunting license that was eight years older than the previous license. It was printed on oilcloth and had been issued to Emil Opelt in Emmet county in 1910. It was in good condition and had evidently been undisturbed for 43 years.

On the back of the old license were some hunting laws. Hunting for prairie chickens was permitted only between September 1 and December 1. Woodcock could be shot from July 10 through January 1. Ruffed grouse, turkey and quail could be taken from November 1 through December 15. Migratory waterfowl including shore birds could be shot from September 1 through April 15, with a possession limit of 50. All other game birds had a limit of 25. The season on ringneck pheasants, however, was to be closed until 1915.

Old licenses can't go back much farther than this. The first resident hunting licenses in Iowa were sold in 1909.

PARROTS IN IOWA?

Thomas H. MacBride in "In Cabins and Sod Houses" spoke of parrots in trees in southeastern Iowa. He was probably right, for Carolina parakeets were once numerous in the Mississippi valley. They ranged to the southern border of the great lakes, west to eastern Colorado and south to the Gulf of Mexico. Lieutenant Pike saw them in the Rockies in midwinter of 1806. They were last reported in Iowa by Elliot Coues in 1874. Their favorite winter food in Iowa was the cocklebur.—*Palimpsest.*



E. B. Speaker Photo.

The diagramatic crappie indicates a normal growth. The photograph within the outline shows stunted growth in an overcrowded environment.

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Pan Fish . . .

(Continued from page 161)

may live to a be a few years older. At five years of age the fish should be in the neighborhood of nine to eleven inches in total length. Five year old bluegills reach a length of about six to nine inches.

In a recent study of a stunted fish population in a southern Iowa gravel pit, crappies in their fifth year of life were six to seven inches in length instead of the normal length of nine to eleven inches. Five year old bluegills were about three and one half and should have been seven or eight inches.

In a balanced fish population all species do well but unfortunately it is difficult to maintain this balance. Once it is upset, it is usually difficult to correct and frequently drastic management measures must be taken.

Several methods have been tried with varying success. They include (1) the removal of size and possession limits; (2) extension or removal of seasons; (3) introduction of predatory game fishes; (4) removal of a part of the fishes that are over-abundant with nets; and (5) stimulate interest of anglers in harvesting more pan fish.

Many states have recognized the high reproduction of pan fishes and have liberalized angling regulations in order that surpluses can be harvested more fully. This is usually done by taking off the size and sometimes catch limits and extending the length of the open seasons to permit harvest at seasons when fishing is best. It has been observed in Iowa, as well as in many other states, that most of the pan fishes can maintain suitable numbers in lakes even under the pressure of year-round angling. This is particularly true of the bullheads, crappies, bluegills and other pan fish.

Our predatory fishes include, among others, the gar, dogfish, northern pike, walleye and bass. They are nature's tools for keeping pan fish populations under control. With the exception of the gar and dogfish, these predators represent important game fish in the angler's creel.

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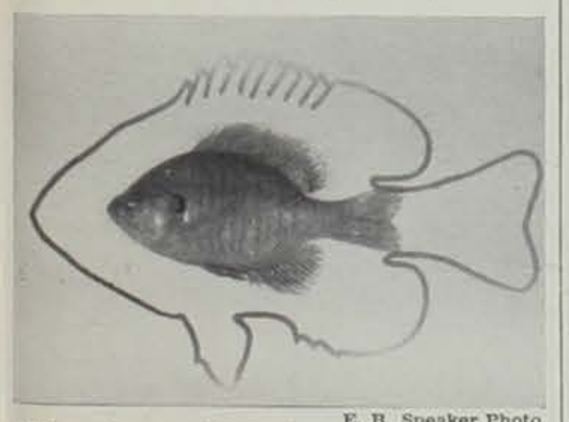


E. B. Speaker Photo.

Although sexually mature, this three-year-old bluegill is not large enough to be a desirable pan fish.

Heavy mortality in the young, disease, parasites and rod-pressure of fishermen often reduce predatory game fish drastically. For this reason they are usually given more protection than the pan fish. As a matter of fact these predators are stocked from our fish hatcheries in water suitable to their needs to serve as a check in areas over-populated with pan fishes.

In some instances lakes become so over-populated with pan fish it is necessary to reduce the population with nets and seines. This is particularly true of bullheads in some of the shallow northern lakes and sunfish in certain of the small artificial lakes and ponds of southern Iowa. These fish, when removed, are transported to other areas unless stunting has taken place throughout much of the life of the fish. In this case it is felt recovery to a size acceptable to anglers would not occur in the normal life-span of the fish and they are destroyed.

What can the angling fraternity do to assist in this program? The most important thing is to fish for these "under-privileged" individuals. Normal pan fish populations can usually be held in check by anglers and natural predators. Intensive fishing is the sensible approach to the problem since it furnishes both sport and food. In waters where fishes are stunted, maximum legal limits should still be taken even if the fish must be destroyed. A reduction of the over-population will afford more food and space for those that remain, and all fish will improve in size and quality. This may seem rather drastic but in the long run both pan and game fishermen will profit by the results.

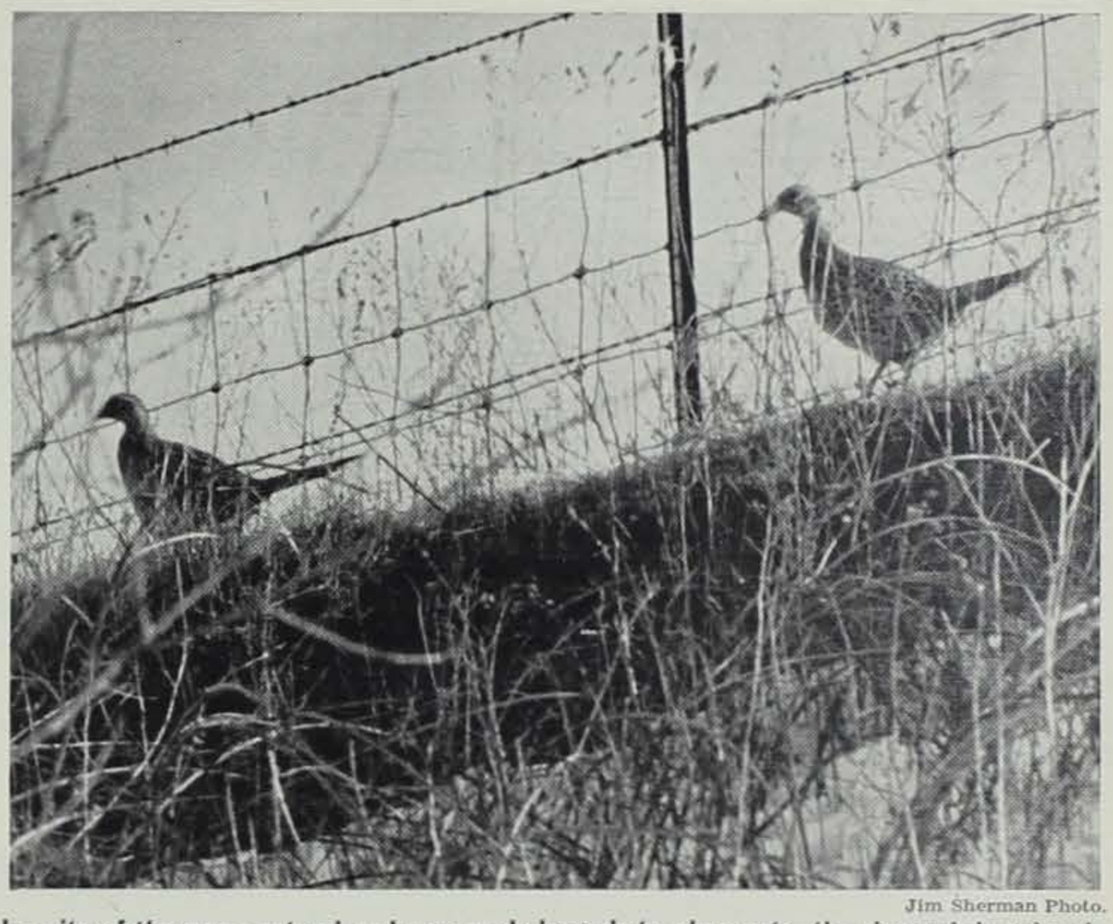
TIPS ON OUTBOARDS

1. If you own your own boat, the manufacturer can recommend the best size. If you fish a sizeable body of water, a 10 or 12 h.p. motor will get you around and still do a nice job of trolling. If you're an average fisherman, a 3 or 5 h.p. model is probably best. A 5 h.p. is the most popular, because in speed and overall performance it compares favorably with motors of slightly larger horsepower.

2. Look for the features you want. Price is an important consideration. The motor should be corrosion resistant and have a waterproof magneto. A name brand is best from a servicing viewpoint.

3. Design of the underwater unit is important. Several manufacturers build models which allow passage through weeds, moss and shallow water.

4. Don't buy a "hot rod" outboard motor. These are overhauled after each race and are not designed for fishermen.—*The Fisherman Magazine.*



Jim Sherman Photo.

In spite of the many natural and man made hazards to pheasants, the ringneck is a tough, adaptable game bird that will continue to provide top shooting sport throughout its range.

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FESANT FANTASY

Phineas P. and Philomena Pheasant rocketed into the air from their nest in the alfalfa field. Even before they were out of earshot they heard the crackling of eggs as the farmer's tractor made an omelet of their prospective phamily. A half a mile away they set their wings and crept under a friendly bush to mourn, for the third time that year, over the fate of the unhatched chicks.

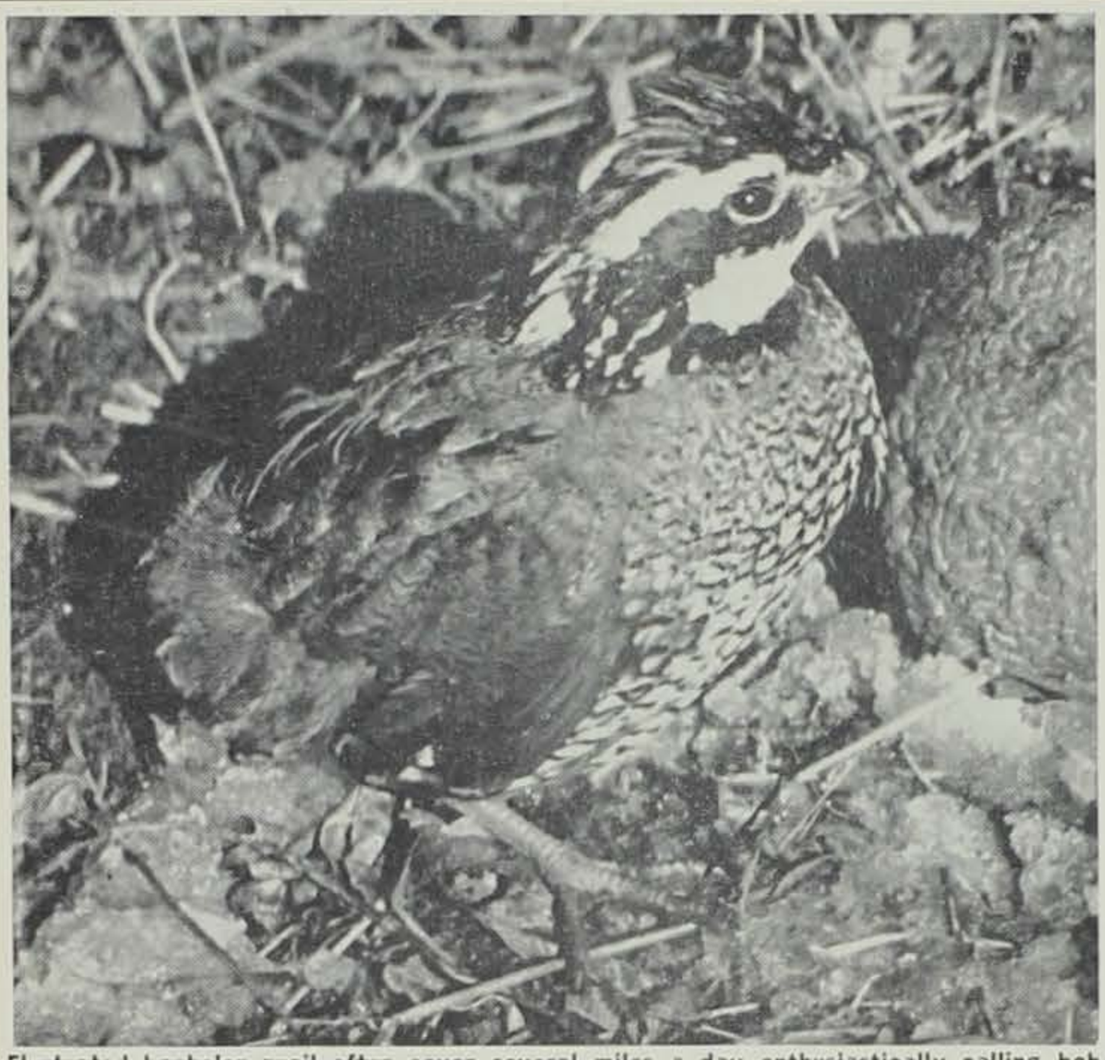
"I'm through," sobbed Philomena, "that's the third clutch this year and I'm just eggshausted." "Easy come, easy go," murmured Phineas philosophically. "Easy go, maybe," his wife snapped, "but from now on you can count me out. Forty-five deaths in the phamily for one year is enough. When I think of poor Phrances, and Phyllis, and Phlorence, and Phern, and Phred, and Phrank, and Phillip, and—what's that noise?" Her husband peeked cautiously through the bush. "It's a man and a dog," he reported, "probably getting him in shape for the hunting season this fall."

"And that's another thing," she went on. "Just what chance have we in this country? It's impossible to find a safe place for a nest now that the pharmers have every inch of their land in crops. If we should be lucky enough to have them hatch, if we are able to find food for them, if we can save part of them from the predators, then the hunters and their blood-thirsty dogs descend on all of us. Just what chance have we?" she asked again. "I'll admit it is a problem," said Phineas, "but the dogs aren't much of a problem. Actually, most of them are rather stupid."

"It was when I was considerably younger and probably a little bit phoolish," he continued, "but I led a dog on the darnedest cross-country tour you've ever seen. We went uphill and downhill, through ditches, across fields, through weed patches. I led him around by his nose for a couple of hours and then deposited him practically at the feet of the hunter. That dog passed out completely. I stuck around a few minutes to see what would happen next, and his master, lacking any water, poured a bottle of beer down the mutt's throat to revive him. Well, sir, that beer almost killed that dog! A setter, Budweiser dog, if I ever saw one."

"You and your corny jokes," muttered Philomena. "And speaking of corn, when do we eat?" "No corn," he reminded her, "It's not out yet. No oats either—they've been harvested. No weed seeds—the weeds have been sprayed with poison. No food," he concluded. "That does it," she cried. "No children, no shelter, no food—let's go back from whence we came." "What do you mean 'from whence we came'?" "China," she answered, "we're Chinese ringneck pheasants, aren't we?" "Sure," he admitted, "but what color is your plumage?" "Brown, of course," Philomena answered, "and if you had looked at me more than three times this year, you would know without asking. Why?" "You haven't a chance in China," he pointed out, "unless you're Red."

"Is there no place in this country for us pheasants?" she cried out. "We can't be parents; we can't be fed; we can't be sheltered—just what can we be?" "We can become extinct," said Phineas . . . and so they did.—Dean Parrott in *Kossuth County Advance.*



Flustrated bachelor quail often cover several miles a day enthusiastically calling bob-white and looking for their summer mate.

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OUR WANDERING QUAIL

By Roger Boehnke
Iowa Cooperative Wildlife Research Unit, Department of Zoology and Entomology Iowa State College

For many years quail have been considered a very stay-put part of our wildlife population. Each year many quail hunters start off the season with the covey that's always been waiting down on the corner of the back 40. But are these the same quail or their offspring?

Recent research by the Wildlife Research Unit, and organizations in other states, have shown that most of our quail have two very itchy feet. During the last two winters quail have been trapped and banded in a 3,320-acre area of Decatur county. A record was kept on each individual quail, and when it was recaptured the distance it moved was determined. Also it was found out who was who in the covey.

For instance, between the winters of 1951-52 and 1952-53, a quail was shot 2⅛ miles from the place where it had been banded. Two other quail were retrapped three-fourths of a mile from the place where the band had been put on their legs.

Further evidence of quail mobility can be deduced from banding records. Only two quail, out of the 93 banded in the winter of 1951-52, were retrapped on the area the following winter. Normally about 20 per cent, or 18 banded quail, should have survived. Since weather conditions were normal and quail were trapped out of every covey except one, about 16 banded quail moved off the research area from one winter to the next.

The big movements for quail usually take place in spring and fall. When spring stimulates the old mating urge, the quail pair off and look for a place to nest. Most coveys have a few spare males who can find no one to start housekeeping with. These frustrated bachelors roam across the hills enthusiastically calling "bob-white" and looking for their summer love. Often they may cover several miles in a day.

Again in the fall several families are shuffled into the remaining coverts after harvesting and falling leaves have ruined much of the summer cover. Here also the quail often have to roam long distances to find a home and friends with which to spend the winter.

Even during the winter, especially during a mild period, a covey may desert a perfect home and go gadding about the country side. Then home is where they are when the sun goes down.

Each fall, year after year, coveys of quail have been found in the same spots on the research area. Yet when these coveys were trapped and banded, no quail were found in the same covey the following year. Either they died or wandered away. New quail moved into the old covey range.

Although each covey acts as a compact unit, very few contain only a single family. Most have one or two involuntarily confirmed bachelors plus some orphans from another family. A quail usually cannot survive a winter alone, so most coveys are filled with all the odds and ends left on the quail range at the end of the summer.

The remaining family ties are broken in the spring when each member goes his own way, probably never to return. Seldom the same quail, or even their offspring, return to the same covey range the following year.

THE UNIQUE THRILL OF DUCK HUNTING

There is something about duck hunting that makes all other sports seem trivial. Once a man has experienced the thrill he can't find another sport that equals it for genuine enjoyment.

Enjoyment is a peculiar word to use in describing duck hunting. You must have had the experience of this sport to see how well the word fits it. Particularly so when the best duck hunting comes in cold and wet weather, with the temperature making numb fingers and toes, together with a runny nose. Those ducks seem to pick the worst days to move about, and the hunter has to endure some hardships to get them.

But there is no thrill like the one that comes to the duck hunter when he first sees that thin black line of a flock of ducks as they appear over the horizon, winging their way closer and closer to the pond or puddle where he waits. As they continue to approach the tension grows and the impulse to shoot before they come in range becomes almost impossible to resist. But it is resisted by the experienced hunter as he crouches low in his blind. Then when the flock swings in over him or his decoys there is that supreme moment when they are in range and he raises to a shooting position and lets go. Three shots are all you can have in your gun, but if you are skillful and remember to "lead them, lead them, lead them," a duck or two will be added to your total.

Ducks that are shot seem to fall in the darnedest places—either in the middle of the slough where it is almost impossible to wade, or on the opposite side of the puddle which means a long walk around. Mark that fallen duck well, or when you get where you think he should be you won't find him. If he is only wing-tipped he will be far away by the time you get there. But when you hit solidly and kill cleanly you will be amply repaid for the cold and hardship endured. You'll understand the thrill of the sport and you'll agree that there is no other sport which equals it.

Our Dad used to tell us, "When the duck season opens you just aren't worth a darn for work. You might just as well go hunting and get it out of your system." You see, our Dad was a duck hunter himself and he understood that far-away look in our eyes and the mind that was far from work. He loved the outdoors and he loved the hardships and enjoyment that the duck hunter experiences.—*Humboldt Independent.*

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Jim Sherman Photo.

Once man has experienced the thrill there is something about duck hunting that makes all other sports seem trivial.

HOW TO FORECAST THE WEATHER

A quick preview of the weather is a must for every sportsman. Whether he's planning to fish, hunt, golf, or picnic. A free pocket-sized booklet on "How To Forecast the Wather," designed to enable any person to become a reasonably accurate weather prophet, has been made available by one of the fishing lines manufacturing companies. It is written in simple language and no special equipment or knowledge is required by the amateur forecasters. "Just a comparison of color photographs with morning or evening skies, a check on the wind direction, and the guide tells what to expect of the weather." Barring Mother Nature's special tricks, this method is quite reliable.

The little guide contains five color photographs of sunset skies, and eleven photographs of morning skies as well as wind direction charts for the amateur.

Copies of the clever little booklet "How To Forecast the Weather" may be obtained free of charge by sending a postcard to Gudebrod Bros. Silk Co., Inc., Dept. 28, 12 South 12th Street, Philadelphia 7, Pa. The manufacturers advise that the supply of booklets is limited and those who want copies should write promptly.